SATELLITE TV

EAGLE

OPERATION / TECHNICAL MANUAL

22 Sep. 2014

Index

Warnings	.....	4
Mount Definitions	.....	5
Controller Views	.....	6
Configuration and Software Versions	.....	8
Menus and Operations	.....	9
Connector Wiring Diagram	.....	11
Raising the ODU Using a 12 VDC Source	.....	11
SWM DirecTV Block Diagram	.....	12
Foot Print and Clearances	.....	13
Returning Parts to the Factory	.....	14

WARNING

Double check *all* electrical and coax connections from the controller to the mount and LNB's BEFORE applying power to, or connecting the satellite receiver to the controller.

Note: Thecontrol cable has 12 wires that control motors, provides GPS information and sensor feedback. If a control cable connector is miss wired it can cause damage to GPS or sensors. This can result in component failure and cause many hours of unnecessary troubleshooting time which costs everyone time and money. A double check of all wiring before powering up will result in a smoother installation.

REMEMBER

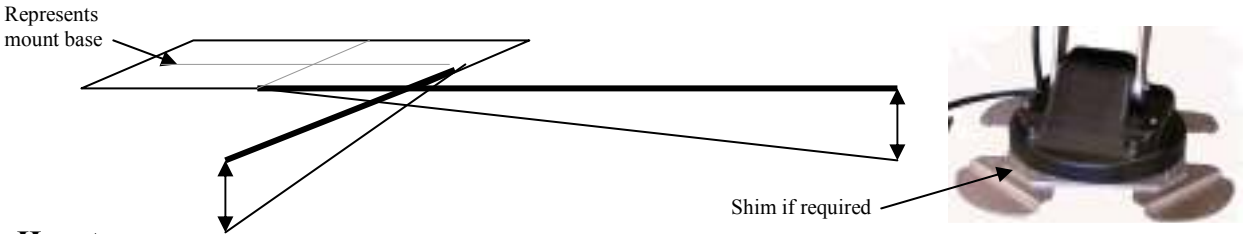
90% of all problems are a result of incorrect **CONNECTIVITY or CONFIGURATION.**

Mount Installation Warning

Your Eagle mount utilizes a GPS system for acquisition. Calculations for skew and elevation are based on a level surface (+or- 3 Degrees, Right, Left, Forward and Back). Failure to level the mount to these specifications during installation can equate to poor performance. To determine if your mount is in compliance to this criteria, you can use the following formula. Tools required...

1. A level
2. A tape measure

Formula = + or - 3 degrees is approximately 5/8" for every 12" from center of mount.



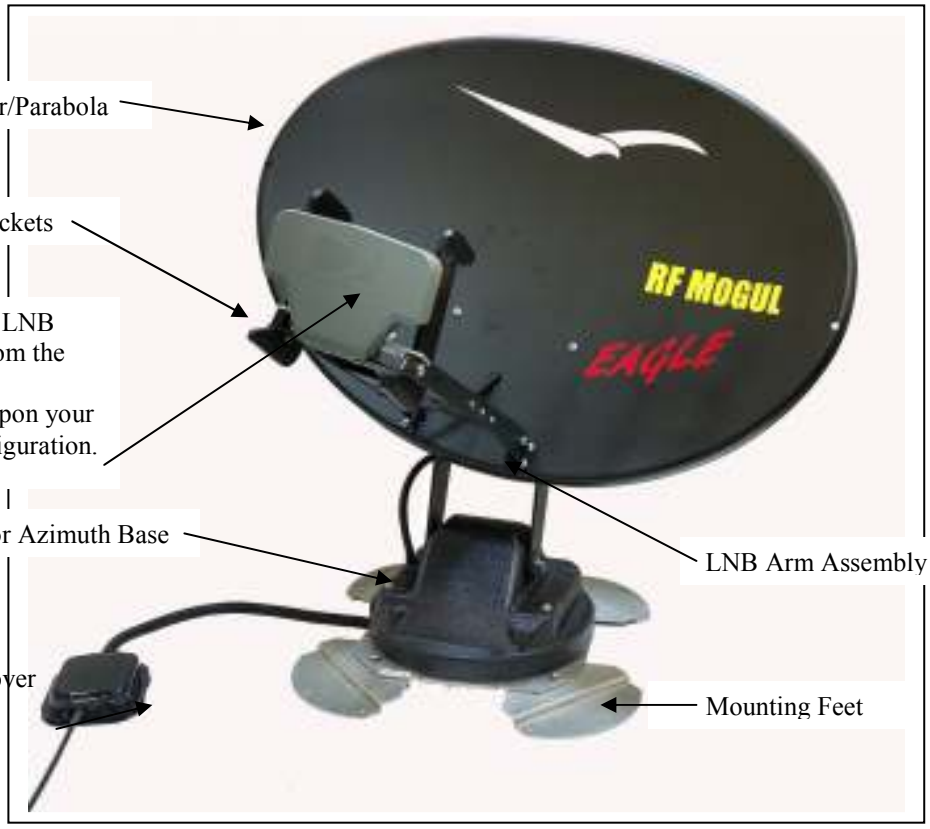
How to measure.... using a level, lay it onto the base of the mount. Bring the bubble of the level to center and at 12" from the center of the mount measure the distance from the bottom of the level to the roof top. If the distance 12" out from center of the mount is *less than 5/8"* then you are within tolerance.

How to adjust the mount.... if leveling of the mount is required, use flat washers to "shim" the low side of the mount to bring it into tolerance. It does not have to be exact, just shim to bring the mount into specs. It may be necessary to lengthen the screws to accommodate a larger adjustment..

Mount definitions

A system consists of several components

MOUNT (ODU)



Items included with the system and are not shown.

1 ea	LNB Landing Plate
15'	Control Cable, 25'
1 ea	Clam Shell
1 ea	Connector, green, 12 pin
1 ea	Power Supply, 12 VDC 7 amp
1 ea	RE-1000 User Guide
1 ea	EAGLE Controller

Controller Views

FRONT VIEW Definitions and Usage

CONTROLLER (IDU)

FIND

Directs the system to "FIND" Satellites.
Navigates through the menu and selects a particular function.

STOW

Directs the system to "STOW" the mount and prepare it for travel
Navigates through the menu and selects a particular function.

LCD Display

Displays the actions of the system.

USB Programming Port

Used for upgrading firmware.

POWER

Will turn controller ON and OFF.
Navigates through the Menu options.

LED

REC indicates the receiver coax is attached to the controller.
VDC indicates power is being supplied to the controller.

REAR VIEW Definitions and Usage

CONTROLLER (IDU)

CONNECTIONS

POWER

12 VDC 7 amp (power supply provided).

CONTROL CABLE CONNECTION:

Termination of the 12 wires of the control cable to the controller takes place here.

TO SATELLITE RECEIVER

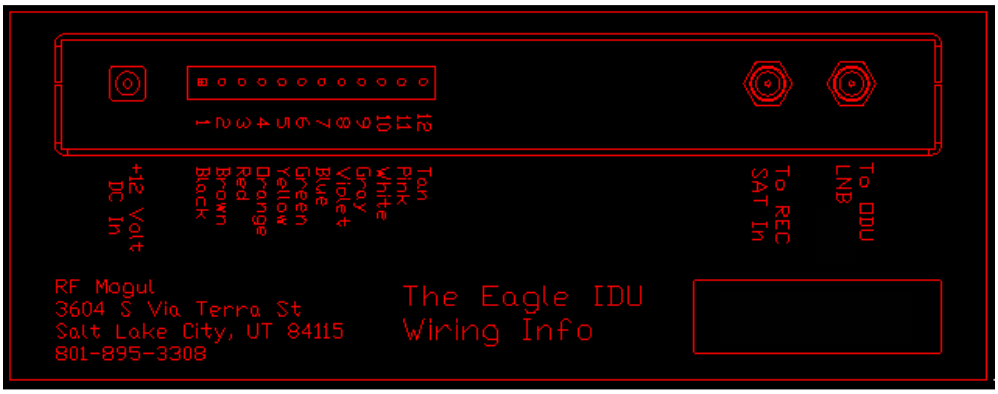
This is a coax pass-through connection to your satellite receiver (Satellite IN). It is optional except for DirecTV SWM.

TO ODU LNB:

This is a coax connection to the Antenna's LNB. The connection is made at the base of the mount to any one of 4 coax cables that run through the mount and are secured to the LNB.

If you have DirecTV SWM, then the cable attached to the DiSEqC switch must be routed ***directly to the controller uninterrupted*** then to the connection marked "TO LNB". (see configuration to determine which coax at the base of the mount goes to the controller).

Label on the bottom of the controller



Configurations and Software Version

Each of the Program Providers will require different software

EAGLE **-1**	**SHAW Direct**	=	107.3, 107.3, 111.1 Satellites	(For Canadian Use Only)
EAGLE **-2**	**DirecTV SWM**	=	99, 101, 103 Satellites	
EAGLE **-3**	**Dish Network**	=	110, 119, 129 Satellites	
EAGLE **-4**	**Bell Express**	=	81, 92 Satellites	(For Canadian Use Only)

TO CONFIGURE

Configuration of your system is done through software. There is a specific version of software for each Program Provider.

- **Go to www.rfmogul.com to download (to your USB Flash Drive) the appropriate software for your program provider.**
- **Place the USB flash drive into the USB Program Port on the front of the controller and turn the power ON.**
- **The controller will display downloading status and transfer the Program Provider file into memory. This process will take approximately 8-10 seconds.**

SOFTWARE VERSION UPGRADES

Why should you think about downloading new software or changing configurations?

1. To take advantage of new innovative features offered by the latest revision of software.
2. If you have called your installer and he/she has recommended it.
3. If you read the History of the new software and you determine that you could benefit from its features.

Menu Options

Menus and Operation

Your controller is menu driven. By selecting a particular menu you can perform many functions besides just "SEARCHING for satellite".

TO SEARCH

- Press the Power button
  - Displayed will be the....
    - **System configuration (software configuration)**
      - ***EAGLE* 1** SHAW (Triple Satellite xKu LNB)
      - ***EAGLE* 2** DIRECTV (SWM 3 LNB)
      - ***EAGLE* 3** DISH NETWORK (Triple Satellite 1000.2 LNB)
      - ***EAGLE* 4** BELL TV (Triple Satellite 1000.2 LNB)
    - **Version of software** i.e. 14.02.07
    - **Options** are accessed by pressing "SELECT" or POWER button again to enter the menu options. To navigate through the options press either the SEARCH (UP arrow) or STOW (DOWN arrow)
    -

TO ENTER MENU OPTIONS

- Press the Power button again after turning ON the power to enter the "menu" portion of your system.....
  - Press the Up and Down arrows to help you navigate through the menu. Once the portion of the menu that you want is displayed, press SELECT (POWER button) to "select" that option....
    - **1: shutdown** - will turn OFF your controller
    - **2: search** - will direct the mount to search for your specific satellite that is specified in your system configuration
    - **3: stow** - will cause the mount to return to its travel position
    - **4: move azimuth** - pressing and holding the appropriate button will manually move your mount in azimuth (Up arrow CLOCKWISE, Down arrow COUNTERCLOCKWISE
    - **5: move elevation** - pressing and holding the appropriate button will manually move your mount in elevation (Up arrow UP, Down arrow DOWN

- **6: move skew** - pressing and holding the appropriate button will manually move your dish in skew (Up arrow right side DOWN, Down arrow left side DOWN
- **7: test dish** - will move the dish in all axis for one complete cycle
- **8: temperature -** will display current operating temperature of its operating environment.
- **9: test azimuth** - will automatically do a test of the azimuth sensor
- **10: test elevation** - will automatically do a test of the elevation sensor
- **11: test skew** - will automatically do a test of the skew sensor
- **12: exit** - Selecting this option will take you back to main menu

NOTE: There is an **"OVER TEMPERATURE"** condition that will be displayed at the beginning of the SEARCH function if the operating environment is in excess of 136°F. It will not prevent the SEARCH routine but will warn of potential damaging heat conditions for the equipment within that operating environment.

AFTER LOCKING ONTO THE PROPER SATELLITE:

The controller will remain ON for a few minutes and then automatically turn OFF.

AFTER STOWING:

The controller will automatically turn OFF.

Updating and Maintaining Software

The software can be maintained by use of a USB Flash Drive.

- Call RF Mogul for the software for your application. Make sure that it is placed in the "root directory" and that no other .hex file is in that directory.
- Insert your flash drive into your EAGLE RE-1 controller.
- Turn power ON
- Wait for the progress bar that will indicate that the software is being successfully loaded (usually 8 seconds).
- Remove the flash drive and press SEARCH to implement acquisition.

Connector Wiring Diagram

Wiring the 12 Pin Controller Connector

Pin	Color	How Used	Where Used
1 =	BLACK	Motor	-Azimuth
2 =	BROWN	Motor	+Azimuth
3 =	RED	Motor	-Elevation
4 =	ORANGE	Motor	+Elevation
5 =	YELLOW	Motor	- Skew
6 =	GREEN	Motor	+Skew
7 =	BLUE	Count	Azimuth
8 =	VIOLET	Count	Elevation
9 =	GRAY	Count	Skew
10 =	WHITE	Ground	
11 =	PINK	12 Volts DC	GPS
12 =	TAN	GPS TXD	GPS

RAISING THE ODU USING A 12 VDC SOURCE

TO RAISE THE MOUNT WITH A BATTERY

Touch the following wires from the control cable directly to a drill battery or any 12 VDC source and it will result in movement of the ODU. To reverse the direction, reverse the wires to your battery.

- **ELEVATION *Red and Orange*** will raise and lower the mount
- **AZIMUTH *Black and Brown*** will rotate the dish
- **SKEW *Yellow and Green*** will tilt dish.

Wire Color	Wire Function
BLACK	+AZ
BROWN	-AZ
RED	+EL
ORANGE	-EL
YELLOW	- SKEW
GREEN	+SKEW

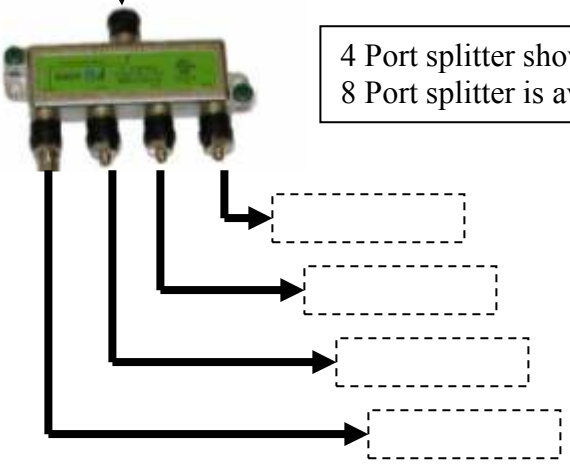
SWM *Block Diagram*

INSET

IDU Receiver line

Note: See bottom of IDU for wiring instructions.

110 Volts AC



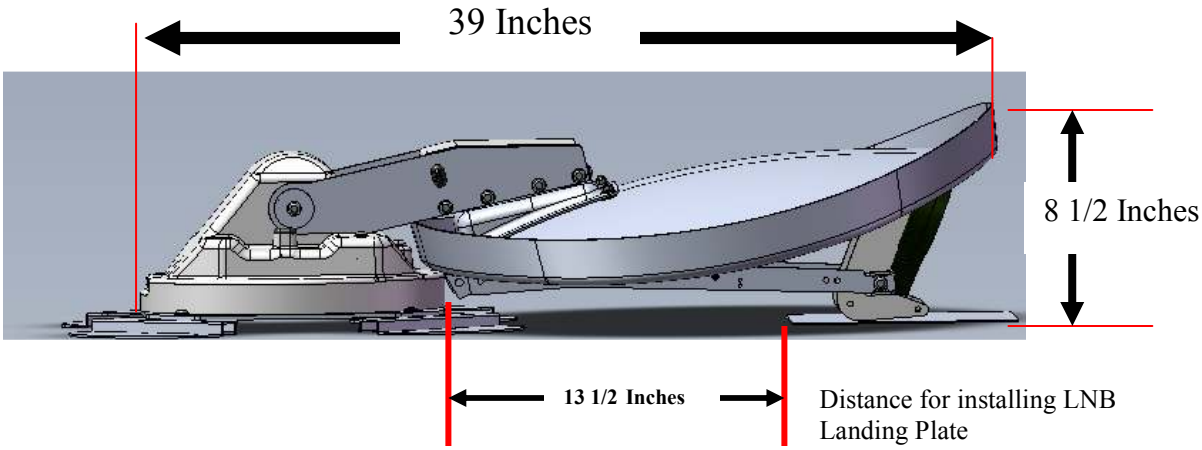
Note:

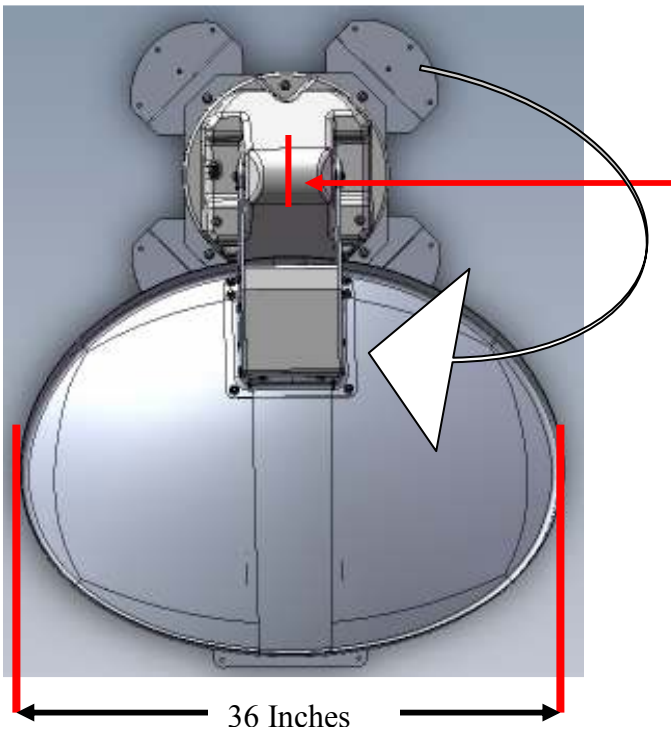
The SWM LNB has 8 channels available. Each DVR takes 2 channels (one coax). A non DVR uses one channel (one coax). You may use any combination of receivers until you use up all 8 channels. Example: A HR34 uses 5 channels leaving 3 channels available.

4 Port splitter shown.
8 Port splitter is available

DIRECTV SWM INSTALLATION

Footprint and Clearances





Rotational clearance from center rotation point is 18 inches when dish is elevated and rotating. This is a safety zone.

CONTROLLER Dimensions
10" Wide
6" Deep
2" high

Returning Parts to the Factory

Parts returned to the factory must contain a Return Material Authorization (RMA) which will be provided by the RF Mogul Technical Support Department at the time of troubleshooting. This will ensure proper accountability of returned equipment or parts. Make sure that the following information is contained on your shipment.

RF Mogul
Attn: Product Evaluation Department
RMA # _____
3604 South Via Terra
South Salt Lake City, UT 84115

You must include your Return Address and Telephone Number. Failure to comply may result in you being billed for a non-returned part.

We appreciate your business. If you need to contact us please see the information below.

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3604 South Via Terra
South Salt Lake City, UT 84115

Tele 801-895-3308
Fax 801-478-5850

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